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Ambient Air Monitoring Report

***Chat Pile Reclamation Area
Leadwood, Missouri***

The Doe Run Company

July 2012



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October 10, 2012

Mr. Mark Nations
The Doe Run Company
P.O. Box 1633
Desloge, Missouri 63601

Re: Ambient Air Monitoring Report – Leadwood Site

Dear Mr. Nations:

Please find attached the July 2012 “*Ambient Air Monitoring Report*” for The Doe Run Company at the Chat Pile Reclamation Area Sites, located near Leadwood, Missouri.

This report will include the following:

- **Glossary of Terms** – Listing of the abbreviations used for each parameter and unit.
- **Ambient Air Quality Standards** – Lists the maximum allowable concentrations for the measured parameters.
- **TSP, Lead & PM₁₀ Particulate Summaries** – Includes the averages of each monitored parameter, which relates to the federal standards.
- **Particulate and Lead Analysis Spreadsheets**.
- **Lab Results (lead & cadmium)** – Lab reports from Inovatia Laboratories, LLC.
- **Meteorological Data Printouts** – This supplies printouts of each parameter.

Barr Engineering Company offers this report as an independent laboratory. This includes the weighing of filters, obtaining lead and cadmium analysis, compiling the data, and preparing the report. No interpretation of the data or analysis of the results is implied or intended. Should you have any questions regarding this report, please call.

Respectfully,



Richard J. Campbell, PE
Chemical Engineer
Senior Environmental Consultant

c: Kathy Rangen
Jason Gunter
Ty Morris

GLOSSARY OF TERMS

$\mu\text{g}/\text{m}^3$	Micrograms per Cubic Meter
mph	Miles per Hour
Wind Direction	Degrees from True North
TSP	Total Suspended Particulate
PM ₁₀	Particulate Matter - 10 Microns or Less
mmHg	Millimeters of Mercury

NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS)

PM ₁₀ – Particulate Matter	24-Hour*	Annual Maximum	150 $\mu\text{g}/\text{m}^3$
Lead	Calendar Quarter	Arithmetic Mean	1.5 $\mu\text{g}/\text{m}^3$
Lead	Rolling 3-Month Average	Arithmetic Mean	0.15 $\mu\text{g}/\text{m}^3$

TSP (Total Suspended Particulate) – There are no Federal Standards that apply solely for TSP.

*This standard must be exceeded more than once a year to constitute a violation.



TSP and Lead Concentration Summary

Chat Pile Reclamation Area Leadwood, Missouri

2012

Date	TSP Big River #4 ($\mu\text{g}/\text{m}^3$)	TSP South #1 ($\mu\text{g}/\text{m}^3$)	TSP East #2 ($\mu\text{g}/\text{m}^3$)	TSP North #3 ($\mu\text{g}/\text{m}^3$)	LEAD Big River #4 ($\mu\text{g}/\text{m}^3$)	LEAD South #1 ($\mu\text{g}/\text{m}^3$)	LEAD East #2 ($\mu\text{g}/\text{m}^3$)	LEAD North #3 ($\mu\text{g}/\text{m}^3$)
7/2/12	54	29	26	29	0.068	0.008	0.008	0.008
7/3/12	71	50	49	50	0.045	0.000	0.000	0.000
7/5/12	71	61	44	41	0.050	0.019	0.000	0.000
7/6/12	47	40	35	40	0.034	0.013	0.012	0.013
7/9/12	44	32	33	28	0.011	0.009	0.000	0.000
7/10/12	40	31	37	31	0.012	0.000	0.000	0.000
7/11/12	44	33	37	32	0.013	0.006	0.006	0.000
7/12/12	36	27	29	25	0.020	0.000	0.000	0.000
7/13/12	28	22	22	20	0.020	0.000	0.000	0.000
7/16/12	20	19	15	13	0.011	0.000	0.000	0.000
7/17/12	43	27	26	25	0.035	0.000	0.000	0.000
7/18/12	64	37	35	35	0.056	0.000	0.000	0.000
7/19/12	76	35	26	30	0.083	0.012	0.000	0.000
7/20/12	53	34	33	26	0.023	0.018	0.007	0.000
7/23/12	45	31	27	27	0.028	0.000	0.007	0.008
7/24/12	58	39	35	39	0.048	0.008	0.000	0.000
7/25/12	39	40	33	41	0.014	0.000	0.000	0.000
7/26/12	26	24	21	24	0.024	0.020	0.010	0.013
7/27/12	32	26	30	30	0.011	0.000	0.000	0.015
7/30/12	88	42	46	41	0.082	0.021	0.029	0.022
7/31/12	69	33	31	27	0.057	0.015	0.014	0.011
Monthly Average	50	34	32	31	0.035	0.007	0.004	0.004
June 2012					0.031	0.006	0.006	0.002
May 2012					0.024	0.011	0.004	0.001
Rolling 3-month Average					0.03	0.01	0.00	0.00
					3-month Average Lead NAAQS $\mu\text{g}/\text{m}^3$			
								0.15

Please see the particulate analysis sheets for explanations of missing or invalid data.

Note: A summary of the Big River #4 sampler data is also included, because it was part of the QA plan.



Particulate Summary

Chat Pile Reclamation Area Leadwood, Missouri

2012

Date	PM ₁₀ Big River #4 ($\mu\text{g}/\text{m}^3$)	PM ₁₀ South #1 ($\mu\text{g}/\text{m}^3$)	PM ₁₀ East #2 ($\mu\text{g}/\text{m}^3$)	PM ₁₀ North #3 ($\mu\text{g}/\text{m}^3$)	PM ₁₀ NAAQS ($\mu\text{g}/\text{m}^3$)
2-Jul	24	16	18	17	150
5-Jul	39	28	33	27	150
8-Jul	20	18	22	19	150
11-Jul	26	20	25	19	150
14-Jul	10	9	11	10	150
17-Jul	17	15	17	14	150
20-Jul	23	16	18	15	150
23-Jul	31	15	24	20	150
26-Jul	15	15	16	15	150
29-Jul	14	10	11	11	150
Monthly Average	22	16	19	17	

Please see the particulate analysis sheets for explanations of missing or invalid data.

Note: A summary of the Big River #4 sampler data is also included, because it was part of the QA plan.

Particulate and Lead Analysis



TSP and Lead Analysis

The Doe Run Company

SAMPLER ID P4557

Big River Site #4- Primary

Sample Date 2012	Filter ID	TSP Filter Net Wt. g	Lead Total Wt. μg	T _{av} C	P _{av} mmHg	P _t mmHg	Ratio P _t /P _{av}	Q _a m ³ /min	Q _{std} m ³ /min	Elapsed Time hr	Sample Volume V _{std} m ³	Mass Concentrations TSP μg/m ³	Lead μg/m ³
7/2/2012	8593425	0.0926	118	27	743.7	36.4	0.951	1.248	1.214	23.70	1727	54	0.068
7/3/2012	8593416	0.1209	77	28	742.8	36.7	0.951	1.253	1.207	23.49	1701	71	0.045
7/5/2012	8593406	0.1182	83	33	743.1	37.1	0.950	1.213	1.158	23.71	1844	71	0.050
7/6/2012	8593598	0.0808	58	31	743.4	36.9	0.950	1.256	1.204	23.69	1711	47	0.034
7/9/2012	8593588	0.0755	19	25	744.2	36.2	0.951	1.247	1.219	23.71	1733	44	0.011
7/10/2012	8593578	0.0681	21	27	744.0	36.4	0.951	1.249	1.218	23.65	1725	40	0.012
7/11/2012	8593569	0.0767	23	28	744.5	36.2	0.951	1.247	1.219	23.66	1730	44	0.013
7/12/2012	8593559	0.0620	35	27	744.3	36.4	0.951	1.249	1.215	23.68	1727	36	0.020
7/13/2012	8593550	0.0483	35	28	744.7	36.3	0.951	1.248	1.217	23.65	1727	28	0.020
7/16/2012	8593540	0.0350	19	29	743.8	36.6	0.951	1.252	1.210	23.72	1722	20	0.011
7/17/2012	8593531	0.0737	59	30	742.3	36.8	0.950	1.254	1.205	23.66	1710	43	0.035
7/18/2012	8593522	0.1086	95	32	742.4	37.0	0.950	1.258	1.200	23.68	1705	64	0.058
7/19/2012	8593513	0.1226	134	33	742.2	37.2	0.950	1.203	1.144	23.53	1615	76	0.083
7/20/2012	8593503	0.0905	39	27	743.9	36.4	0.951	1.249	1.214	23.62	1721	53	0.023
7/23/2012	8594893	0.0745	46	32	745.4	37.1	0.950	1.230	1.177	23.62	1668	45	0.028
7/24/2012	8594884	0.0901	75	34	743.1	37.3	0.950	1.158	1.100	23.68	1561	58	0.048
7/25/2012	8594878	0.0801	21	34	740.3	37.3	0.950	1.145	1.082	23.57	1531	39	0.014
7/26/2012	8594865	0.0450	41	28	739.9	36.6	0.951	1.251	1.204	23.59	1704	26	0.024
7/27/2012	8594857	0.0547	19	29	742.3	36.8	0.951	1.252	1.207	23.61	1710	32	0.011
7/30/2012	8594848	0.1492	139	29	741.4	36.8	0.951	1.252	1.208	23.54	1703	88	0.082
7/31/2012	8594838	0.1182	97	28	742.1	36.7	0.951	1.253	1.205	23.66	1711	89	0.057

Data Captured	TSP	Lead
Valid Samples:	21	21
Scheduled Samples:	21	21
Percent Data Captured:	100%	100%

Monthly Average:	50	0.035
Standard Deviation:	18	0.023
Maximum:	88	0.083
Minimum:	20	0.011

NOTES

7/4/2012 - Holiday - No samples scheduled

DEFINITIONS and CALCULATIONS

T_{av} = average temperature in degrees Celsius

Q_a = look up table volumetric flow rate

P_{av} = average station pressure in millimeters of mercury

Q_{std} = total sample volumetric flow rate corrected to standard conditions

P_t = ((Temp in °Kelvin * Temp Slope)+Temp Int.)*1.868

V_{std} = total sample volume corrected to standard conditions

P_t = ((Temp in °Kelvin * 0.0664)+(-0.4213))*1.868

TSP = mass concentration in μg/std m³

P_t/P_{av} = pressure ratio of P_t and P_{av} = 1 - P_t/P_{av}

Lead = mass concentration in μg/std m³



TSP and Lead Analysis

The Doe Run Company

SAMPLER ID P4559

Leadwood Site #1 Wortham

Sample Date 2012	Filter ID	TSP Filter Net Wt. g	Lead Total Wt. μg	T _{av} C	P _{av} mmHg	P _f mmHg	Ratio P _f /P _a	Q _s m ³ /min	Q _{std} m ³ /min	Elapsed Time hr	Sample Volume V _{std} m ³	Mass Concentrations TSP μg/m ³	Lead μg/m ³
7/2/2012	8593427	0.0501	13	27	743.7	36.4	0.951	1.255	1.220	23.70	1734	29	0.008
7/3/2012	8593417	0.0862	< 10	29	742.8	36.7	0.951	1.258	1.213	23.69	1724	50	0.000
7/5/2012	8593408	0.0999	32	33	743.1	37.1	0.950	1.217	1.159	23.70	1648	61	0.019
7/6/2012	8593592	0.0687	22	31	743.4	36.9	0.950	1.282	1.208	23.78	1728	40	0.013
7/9/2012	8593582	0.0555	15	25	744.2	36.2	0.951	1.252	1.224	23.56	1730	32	0.009
7/10/2012	8593579	0.0537	< 10	27	744.0	36.4	0.951	1.264	1.221	23.66	1733	31	0.000
7/11/2012	8593570	0.0578	11	28	744.5	36.2	0.951	1.253	1.224	23.71	1742	33	0.008
7/12/2012	8593561	0.0470	< 10	27	744.3	36.4	0.951	1.255	1.221	23.67	1734	27	0.000
7/13/2012	8593551	0.0377	< 10	28	744.7	36.3	0.951	1.254	1.223	23.68	1737	22	0.000
7/16/2012	8593542	0.0327	< 10	29	743.8	36.8	0.951	1.258	1.215	23.65	1725	19	0.000
7/17/2012	8593532	0.0459	< 10	30	742.3	36.8	0.950	1.280	1.210	23.74	1724	27	0.000
7/18/2012	8593523	0.0628	< 10	32	742.4	37.0	0.950	1.263	1.205	23.73	1716	37	0.000
7/19/2012	8593507	0.0575	19	33	742.2	37.2	0.950	1.206	1.147	23.65	1627	35	0.012
7/20/2012	8593504	0.0598	32	27	743.9	36.4	0.951	1.255	1.220	23.69	1734	34	0.018
7/23/2012	8594895	0.0525	< 10	32	745.4	37.1	0.950	1.235	1.181	23.65	1675	31	0.000
7/24/2012	8594885	0.0614	13	34	743.1	37.3	0.950	1.159	1.100	23.71	1565	39	0.008
7/25/2012	8594870	0.0612	< 10	34	740.3	37.3	0.950	1.145	1.082	23.73	1541	40	0.000
7/26/2012	8594887	0.0409	35	28	739.9	36.8	0.951	1.257	1.210	23.73	1722	24	0.020
7/27/2012	8594851	0.0450	< 10	29	742.3	36.8	0.951	1.258	1.213	23.74	1728	28	0.000
7/30/2012	8594842	0.0721	37	29	741.4	36.8	0.951	1.258	1.212	23.70	1723	42	0.021
7/31/2012	8594832	0.0572	27	29	742.1	36.7	0.951	1.259	1.211	23.74	1725	33	0.015

Data Captured	TSP	Lead
Valid Samples:	21	21
Scheduled Samples:	21	21
Percent Data Captured:	100%	100%

Monthly Average:	34	0.007
Standard Deviation:	10	0.008
Maximum:	61	0.021
Minimum:	19	0.000

NOTES

7/4/2012 - Holiday - No samples scheduled

DEFINITIONS and CALCULATIONS

T_{av} = average temperature in degrees Celsius

P_{av} = average station pressure in millimeters of mercury

P_f = (((Temp in °K * Temp Slope))+Temp Int.))*1.868

P_t = ((Temp in °K * 0.0664)+(-0.4213))*1.868

P_f/P_a = pressure ratio of P_f and P_{av} = 1 - P_t/P_{av}

Q_s = look up table volumetric flow rate

Q_{std} = total sample volumetric flow rate corrected to standard conditions

V_{std} = total sample volume corrected to standard conditions

TSP = mass concentration in μg/std m³

Lead = mass concentration in μg/std m³



TSP and Lead Analysis

The Doe Run Company

SAMPLER ID P4476

Leadwood Site #2 - Office

Sample Date 2012	Filter ID	TSP Filter Net Wt. g	Lead Total Wt. µg	T _{av} C	P _{av} mmHg	P _f mmHg	Ratio P _f /P _a	Q _a m ³ /min	Q _{std} m ³ /min	Elapsed Time hr	Sample Volume V _{std} m ³	Mass Concentrations TSP µg/m ³	Lead µg/m ³
7/2/2012	8593428	0.0445	14	27	743.7	36.4	0.951	1.238	1.204	23.80	1704	26	0.008
7/3/2012	8593419	0.0839	< 10	29	742.8	36.7	0.951	1.242	1.197	23.83	1897	49	0.000
7/5/2012	8593410	0.0711	< 10	33	743.1	37.1	0.950	1.205	1.148	23.52	1620	44	0.000
7/6/2012	8593584	0.0593	20	31	743.4	36.9	0.950	1.245	1.193	23.54	1685	35	0.012
7/9/2012	8593584	0.0561	< 10	25	744.2	36.2	0.951	1.238	1.208	23.40	1696	33	0.000
7/10/2012	8593581	0.0827	< 10	27	744.0	36.4	0.951	1.238	1.205	23.59	1708	37	0.000
7/11/2012	8593572	0.0841	10	28	744.5	36.2	0.951	1.238	1.208	23.85	1714	37	0.006
7/12/2012	8593583	0.0497	< 10	27	744.3	36.4	0.951	1.238	1.205	23.57	1704	29	0.000
7/13/2012	8593553	0.0378	< 10	28	744.7	36.3	0.951	1.238	1.207	23.61	1702	22	0.000
7/16/2012	8593544	0.0249	< 10	29	743.8	36.6	0.951	1.241	1.199	23.59	1698	15	0.000
7/17/2012	8593534	0.0440	< 10	30	742.3	36.8	0.950	1.243	1.194	23.63	1693	26	0.000
7/18/2012	8593525	0.0583	< 10	32	742.4	37.0	0.950	1.246	1.189	23.54	1680	35	0.000
7/19/2012	8593509	0.0423	< 10	33	742.2	37.2	0.950	1.196	1.137	23.58	1607	26	0.000
7/20/2012	8593506	0.0558	11	27	743.9	36.4	0.951	1.239	1.204	23.58	1703	33	0.007
7/23/2012	8594887	0.0448	11	32	745.4	37.1	0.950	1.221	1.168	23.54	1649	27	0.007
7/24/2012	8594887	0.0538	< 10	34	743.1	37.3	0.950	1.154	1.096	23.60	1652	35	0.000
7/25/2012	8594872	0.0499	< 10	34	740.3	37.3	0.950	1.142	1.079	23.45	1519	33	0.000
7/26/2012	8594869	0.0363	17	28	739.9	36.6	0.951	1.240	1.194	23.57	1688	21	0.010
7/27/2012	8594853	0.0803	< 10	29	742.3	36.8	0.951	1.241	1.197	23.53	1690	30	0.000
7/30/2012	8594844	0.0774	49	29	741.4	36.8	0.951	1.241	1.196	23.58	1691	46	0.029
7/31/2012	8594834	0.0530	24	29	742.1	36.7	0.951	1.242	1.195	23.54	1687	31	0.014

Data Captured	TSP	Lead
Valid Samples:	21	21
Scheduled Samples:	21	21
Percent Data Captured:	100%	100%

Monthly Average:	32	0.004
Standard Deviation:	8	0.007
Maximum:	49	0.029
Minimum:	15	0.000

NOTES

7/4/2012 - Holiday - No samples scheduled

DEFINITIONS and CALCULATIONS

T_{av} = average temperature in degrees Celcius

P_{av} = average station pressure in millimeters of mercury

P_f = (((Temp in °Kelvin * Temp Slope))+Temp Int.))*1.868

P_f = ((Temp in °Kelvin * 0.0664)+(-0.4213))*1.868

P_f/P_a = pressure ratio of P_f and P_{av} = 1 - P_f/P_{av}

Q_a = look up table volumetric flow rate

Q_{std} = total sample volumetric flow rate corrected to standard conditions

V_{std} = total sample volume corrected to standard conditions

TSP = mass concentration in µg/std m³

Lead = mass concentration in µg/std m³



TSP and Lead Analysis

The Doe Run Company

SAMPLER ID P6793

Leadwood Site #3 by School

Sample Date 2012	Filter ID	TSP Filter Net Wt. g	Lead Total Wt. μg	T _{av} C	P _{av} mmHg	P _f mmHg	Ratio P _f /P _a	Q _a m ³ /min	Q _{std} m ³ /min	Elapsed Time hr	Sample Volume V _{std} m ³	Mass Concentrations TSP μg/m ³	Lead μg/m ³
7/2/2012	8593428	0.0489	14	27	743.7	36.4	0.951	1.235	1.201	23.79	1714	29	0.008
7/3/2012	8593418	0.0848	< 10	29	742.8	36.7	0.951	1.239	1.194	23.84	1708	50	0.000
7/5/2012	8593409	0.0682	< 10	33	743.1	37.1	0.950	1.207	1.149	23.89	1648	41	0.000
7/6/2012	8593593	0.0690	22	31	743.4	36.9	0.950	1.242	1.191	23.87	1705	40	0.013
7/9/2012	8593583	0.0476	< 10	25	744.2	36.2	0.951	1.233	1.205	23.67	1711	28	0.000
7/10/2012	8593580	0.0525	< 10	27	744.0	36.4	0.951	1.235	1.202	23.83	1719	31	0.000
7/11/2012	8593571	0.0553	< 10	26	744.5	36.2	0.951	1.233	1.205	23.91	1729	32	0.000
7/12/2012	8593562	0.0435	< 10	27	744.3	36.4	0.951	1.235	1.202	23.77	1714	25	0.000
7/13/2012	8593552	0.0352	< 10	26	744.7	36.3	0.951	1.235	1.204	23.86	1723	20	0.000
7/16/2012	8593543	0.0226	< 10	29	743.8	36.6	0.951	1.239	1.197	23.67	1700	13	0.000
7/17/2012	8593533	0.0422	< 10	30	742.3	36.8	0.950	1.240	1.192	23.79	1701	25	0.000
7/18/2012	8593524	0.0597	< 10	32	742.4	37.0	0.950	1.244	1.187	23.88	1700	35	0.000
7/19/2012	8593508	0.0483	< 10	33	742.2	37.2	0.950	1.199	1.140	23.77	1625	30	0.000
7/20/2012	8593505	0.0450	< 10	27	743.9	36.4	0.951	1.236	1.201	23.92	1723	26	0.000
7/23/2012	8594896	0.0448	13	32	745.4	37.1	0.950	1.221	1.168	23.60	1654	27	0.008
7/24/2012	8594886	0.0613	< 10	34	743.1	37.3	0.950	1.161	1.103	23.81	1575	39	0.000
7/25/2012	8594871	0.0634	< 10	34	740.3	37.3	0.950	1.150	1.087	23.57	1538	41	0.000
7/26/2012	8594868	0.0404	22	28	739.9	36.6	0.951	1.238	1.191	23.94	1711	24	0.013
7/27/2012	8594852	0.0511	26	29	742.3	36.6	0.951	1.238	1.194	23.74	1701	30	0.015
7/30/2012	8594843	0.0701	38	29	741.4	36.6	0.951	1.238	1.193	23.87	1708	41	0.022
7/31/2012	8594833	0.0465	19	29	742.1	36.7	0.951	1.240	1.192	23.81	1703	27	0.011

Data Captured	TSP	Lead
Valid Samples:	21	21
Scheduled Samples:	21	21
Percent Data Captured:	100%	100%

Monthly Average:	31	0.004
Standard Deviation:	9	0.007
Maximum:	50	0.022
Minimum:	13	0.000

NOTES

7/4/2012 - Holiday - No samples scheduled

Filter Blank	Nominal Airflow	Tolerance ±5 μm ³
7/31/2012	8594831	0.0000 < 10 25 760.0 36.2 0.952 1.234 1.233 24.00 1776 0.0 0.000

DEFINITIONS and CALCULATIONS

T_{av} = average temperature in degrees Celcius

P_{av} = average station pressure in millimeters of mercury

P_f = (((Temp in °Kelvin * Temp Slope))+Temp Int.)*1.868

P_f = ((Temp in °Kelvin * 0.0664)+(-0.4213))*1.868

P_f/P_a = pressure ratio of P_f and P_{av} = 1 - P_f/P_{av}

Q_a = look up table volumetric flow rate

Q_{std} = total sample volumetric flow rate corrected to standard conditions

V_{std} = total sample volume corrected to standard conditions

TSP = mass concentration in μg/std m³

Lead = mass concentration in μg/std m³



TSP and Lead Analysis

The Doe Run Company

SAMPLER ID P6609

Big River Site #4 - QA

Sample Date	Filter ID	TSP Filter Net Wt.	Lead Total Wt.	T_{av}	P_{av}	P_f	Ratio P_f/P_{av}	Q_a	Q_{std}	Elapsed Time	Sample Volume V_{std}	Mass Concentrations		
2012		g	μg	C	mmHg	mmHg		m^3/min	m^3/min	hr	m^3	TSP $\mu\text{g}/\text{m}^3$	Lead $\mu\text{g}/\text{m}^3$	
7/3/2012	8593426	0.1245	75	29	742.8	36.7	0.951	1.244	1.199	23.67	1703	73	0.044	
7/5/2012	8593407	0.1160	77	33	743.1	37.1	0.950	1.207	1.149	23.63	1629	71	0.047	
7/10/2012	8593589	0.0671	21	27	744.0	36.4	0.951	1.240	1.207	23.65	1713	39	0.012	
7/12/2012	8593560	0.0622	41	27	744.3	36.4	0.951	1.240	1.207	23.62	1710	36	0.024	
7/17/2012	8593541	0.0719	63	30	742.3	36.8	0.950	1.245	1.197	23.66	1699	42	0.037	
7/19/2012	8593514	0.1207	123	33	742.2	37.2	0.950	1.197	1.138	23.43	1600	75	0.077	
7/24/2012	8594894	0.0858	71	34	743.1	37.3	0.950	1.154	1.098	23.56	1549	55	0.048	
7/26/2012	8594866	0.0463	37	28	739.9	36.6	0.951	1.243	1.196	23.68	1699	27	0.022	
7/31/2012	8594839	0.1110	86	29	742.1	36.7	0.951	1.245	1.197	23.50	1688	66	0.051	

Valid Samples: 9 9

Scheduled Samples: 9 9

Percent Data Captured: 100% 100%

Monthly Average: 54 0.040

Standard Deviation: 18 0.019

Maximum: 75 0.077

Minimum: 27 0.012

NOTES

DEFINITIONS and CALCULATIONS

T_{av} = average temperature in degrees Celcius

Q_a = look up table volumetric flow rate

P_{av} = average station pressure in millimeters of mercury

Q_{std} = total sample volumetric flow rate corrected to standard conditions

P_f = (((Temp in °Kelvin * Temp Slope))+Temp Int.))*1.868

V_{std} = total sample volume corrected to standard conditions

P_f = ((Temp in °Kelvin * 0.0664)+(-0.4213))*1.868

TSP = mass concentration in $\mu\text{g}/\text{std m}^3$

P_f/P_{av} = pressure ratio of P_f and P_{av} = $1 - P_f/P_{av}$

Lead = mass concentration in $\mu\text{g}/\text{std m}^3$

PM₁₀ Analysis

BARR

The Doe Run Company



PM₁₀ Analysis

The Doe Run Company

SAMPLER ID P1500										Leadwood Site #1 Wortham			
Sample Date 2012	Filter ID	PM10 Filter Net Wt. g	T _{av} C	P _{av} mmHg	P _r mmHg	Ratio P _r /P _{av}	Q _a m ³ /min	Q _{std} m ³ /min	Elapsed Time hr	Sample Volume V _{std} m ³	Mass Conc. PM ₁₀ μg/m ³		
7/2/2012	262845	0.0258	27	743.7	36.4	0.951	1.167	1.134	23.92	1628	16		
7/5/2012	262838	0.0446	33	743.1	37.1	0.950	1.162	1.107	23.89	1587	28		
7/8/2012	262833	0.0286	27	743.7	36.4	0.951	1.167	1.134	23.80	1620	18		
7/11/2012	262823	0.0319	26	744.5	36.2	0.951	1.165	1.139	23.84	1629	20		
7/14/2012	262807	0.0145	25	745.4	36.2	0.951	1.165	1.141	23.84	1631	9		
7/17/2012	264697	0.0240	30	742.3	36.8	0.950	1.171	1.125	23.83	1609	15		
7/20/2012	264694	0.0259	27	743.9	36.4	0.951	1.167	1.134	23.84	1623	16		
7/23/2012	264678	0.0240	32	745.4	37.1	0.950	1.167	1.116	23.89	1600	15		
7/26/2012	264675	0.0236	28	739.9	36.6	0.951	1.169	1.125	23.85	1610	15		
7/29/2012	264666	0.0162	23	744.9	36.0	0.952	1.162	1.144	23.82	1635	10		
Valid Samples:	10	Scheduled Samples:	10	Percent Data Captured:	100%	Monthly Average:	16	Standard Deviation:	5	Maximum:	28	Minimum:	9
NOTES													
DEFINITIONS and CALCULATIONS													
T_{av} = average temperature in degrees Celcius													
P_{av} = average station pressure in millimeters of mercury													
$P_r = ((Temp \text{ in } ^\circ\text{Kelvin} * \text{Temp Slope}) + \text{Temp Int.}) * 1.868$													
$P_r = ((Temp \text{ in } ^\circ\text{Kelvin} * 0.0664) + (-0.4213)) * 1.868$													
P_r/P_{av} = pressure ratio of P_r and P_{av} = $1 - Pf/P_{av}$													
Q_a = look up table volumetric flow rate													
Q_{std} = sample volumetric flow rate corrected to standard conditions													
V_{std} = sample volume corrected to standard conditions													



PM₁₀ Analysis

The Doe Run Company

SAMPLER ID P1018											Leadwood Site #2 - Office											
Sample Date	Filter ID	PM10 Filter Net Wt. g	T _{av} C	P _{av} mmHg	P _f mmHg	Ratio P _f /P _a	Q _a m ³ /min	Q _{std} m ³ /min	Elapsed Time hr	Sample Volume V _{std} m ³	Mass Conc. PM ₁₀ µg/m ³											
7/2/2012	262843	0.0286	27	743.7	36.4	0.951	1.168	1.136	23.82	1623	18											
7/5/2012	262834	0.0519	33	743.1	37.1	0.950	1.162	1.107	23.87	1585	33											
7/8/2012	262831	0.0357	27	743.7	36.4	0.951	1.168	1.136	23.85	1625	22											
7/11/2012	262821	0.0409	26	744.5	36.2	0.951	1.166	1.140	23.87	1633	25											
7/14/2012	262805	0.0183	25	745.4	36.2	0.951	1.166	1.142	23.88	1638	11											
7/17/2012	264695	0.0269	30	742.3	36.8	0.950	1.173	1.127	23.84	1612	17											
7/20/2012	264692	0.0297	27	743.9	36.4	0.951	1.169	1.136	23.85	1625	18											
7/23/2012	264676	0.0376	32	745.4	37.1	0.950	1.167	1.117	23.86	1598	24											
7/26/2012	264673	0.0253	28	739.9	36.6	0.951	1.170	1.126	23.87	1613	16											
7/29/2012	264664	0.0188	23	744.9	36.0	0.952	1.163	1.145	23.83	1638	11											
Valid Samples: 10			Monthly Average: 19			Scheduled Samples: 10			Standard Deviation: 7													
Percent Data Captured: 100%			Maximum: 33			Minimum: 11																
NOTES																						
DEFINITIONS and CALCULATIONS																						
T _{av} = average temperature in degrees Celcius																						
P _{av} = average station pressure in millimeters of mercury																						
P _f = ((Temp in °Kelvin * Temp Slope)+Temp Int.)*1.868																						
P _f = ((Temp in °Kelvin * 0.0664)+(-0.4213))*1.868																						
P _f /P _a = pressure ratio of P _f and P _{av} = 1 - Pf/P _{av}																						
Q _a = look up table volumetric flow rate																						
Q _{std} = sample volumetric flow rate corrected to standard conditions																						
V _{std} = sample volume corrected to standard conditions																						



PM₁₀ Analysis

The Doe Run Company

SAMPLER ID P6071											Leadwood Site #3 by School		
Sample Date 2012	Filter ID	PM10 Filter Net Wt. g	T _{av} C	P _{av} mmHg	P _f mmHg	Ratio P _o /P _a	Q _a m ³ /min	Q _{std} m ³ /min	Elapsed Time hr	Sample Volume V _{std} m ³	Mass Conc. PM ₁₀ µg/m ³		
7/2/2012	262844	0.0282	27	743.7	36.4	0.951	1.178	1.145	23.96	1647	17		
7/5/2012	262835	0.0427	33	743.1	37.1	0.950	1.171	1.116	23.61	1581	27		
7/8/2012	262832	0.0315	27	743.7	36.4	0.951	1.178	1.145	23.58	1620	19		
7/11/2012	262822	0.0312	26	744.5	36.2	0.951	1.176	1.150	23.61	1629	19		
7/14/2012	262806	0.0156	25	745.4	36.2	0.951	1.176	1.152	23.61	1632	10		
7/17/2012	264696	0.0231	30	742.3	36.8	0.950	1.183	1.136	23.59	1608	14		
7/20/2012	264693	0.0245	27	743.9	36.4	0.951	1.179	1.146	23.63	1624	15		
7/23/2012	264677	0.0325	32	745.4	37.1	0.950	1.177	1.126	23.60	1594	20		
7/26/2012	264674	0.0237	28	739.9	36.6	0.951	1.180	1.136	23.60	1608	15		
7/29/2012	264665	0.0173	23	744.9	36.0	0.952	1.173	1.155	23.58	1635	11		



PM₁₀ Analysis

The Doe Run Company

Lab Results (Lead and Cadmium)



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ANALYSIS REPORT

Client Information:

Barr Engineering Company
7390 Ohms Lane
Edina, MN 55439-2330

Chain of Custody No.: 12-0686
Date Received: 07/18/12
Analysis Method: 40 CFR §50 Appendix G

Location Leadwood

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
123581	8593427	07/02/12	#1 South - Wortham	13	< 10	07/31/12 - DS
123582	8593429	07/02/12	#2 East - Office	14	< 10	07/31/12 - DS
123583	8593428	07/02/12	#3 North - School	14	< 10	07/31/12 - DS
123584	8593417	07/03/12	#1 South - Wortham	< 10	< 10	07/31/12 - DS
123585	8593419	07/03/12	#2 East - Office	< 10	< 10	07/31/12 - DS
123586	8593418	07/03/12	#3 North - School	< 10	< 10	07/31/12 - DS
123587	8593408	07/05/12	#1 South - Wortham	32	< 10	07/31/12 - DS
123588	8593410	07/05/12	#2 East - Office	< 10	< 10	07/31/12 - DS
123589	8593409	07/05/12	#3 North - School	< 10	< 10	07/31/12 - DS
123590	8593592	07/06/12	#1 South - Wortham	22	< 10	07/31/12 - DS
123591	8593594	07/06/12	#2 East - Office	20	< 10	07/31/12 - DS
123592	8593593	07/06/12	#3 North - School	22	< 10	07/31/12 - DS

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ANALYSIS REPORT

Client Information:

Barr Engineering Company
7390 Ohms Lane
Edina, MN 55439-2330

Chain of Custody No.: 12-0717
Date Received: 07/27/12
Analysis Method: 40 CFR §50
Appendix G

Location Leadwood

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
123694	8593582	07/09/12	#1 South - Wortham	15	< 10	08/01/12 - DS
123695	8593584	07/09/12	#2 East - Office	< 10	< 10	08/01/12 - DS
123696	8593583	07/09/12	#3 North - School	< 10	< 10	08/01/12 - DS
123697	8593579	07/10/12	#1 South - Wortham	< 10	< 10	08/01/12 - DS
123698	8593581	07/10/12	#2 East - Office	< 10	< 10	08/01/12 - DS
123699	8593580	07/10/12	#3 North - School	< 10	< 10	08/01/12 - DS
123700	8593570	07/11/12	#1 South - Wortham	11	< 10	08/01/12 - DS
123701	8593572	07/11/12	#2 East - Office	10	< 10	08/01/12 - DS
123702	8593571	07/11/12	#3 North - School	< 10	< 10	08/01/12 - DS
123703	8593561	07/12/12	#1 South - Wortham	< 10	< 10	08/01/12 - DS
123704	8593563	07/12/12	#2 East - Office	< 10	< 10	08/01/12 - DS
123705	8593562	07/12/12	#3 North - School	< 10	< 10	08/01/12 - DS
123706	8593551	07/13/12	#1 South - Wortham	< 10	< 10	08/01/12 - DS
123707	8593553	07/13/12	#2 East - Office	< 10	< 10	08/01/12 - DS
123708	8593552	07/13/12	#3 North - School	< 10	< 10	08/01/12 - DS

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ANALYSIS REPORT

Client Information:

Barr Engineering Company
7390 Ohms Lane
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Chain of Custody No.: 12-0745
Date Received: 08/03/12
Analysis Method: 40 CFR §50
Appendix G

Location

Leadwood

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
123814	8593542	07/16/12	#1 South - Wortham	< 10	< 10	08/07/12 - DS
123815	8593544	07/16/12	#2 East - Office	< 10	< 10	08/07/12 - DS
123816	8593543	07/16/12	#3 North - School	< 10	< 10	08/07/12 - DS
123817	8593532	07/17/12	#1 South - Wortham	< 10	< 10	08/07/12 - DS
123818	8593534	07/17/12	#2 East - Office	< 10	< 10	08/07/12 - DS
123819	8593533	07/17/12	#3 North - School	< 10	< 10	08/07/12 - DS
123820	8593523	07/18/12	#1 South - Wortham	< 10	< 10	08/07/12 - DS
123821	8593525	07/18/12	#2 East - Office	< 10	< 10	08/07/12 - DS
123822	8593524	07/18/12	#3 North - School	< 10	< 10	08/07/12 - DS
123823	8593507	07/19/12	#1 South - Wortham	19	< 10	08/07/12 - DS
123824	8593509	07/19/12	#2 East - Office	< 10	< 10	08/07/12 - DS
123825	8593508	07/19/12	#3 North - School	< 10	< 10	08/07/12 - DS
123826	8593504	07/20/12	#1 South - Wortham	32	< 10	08/07/12 - DS
123827	8593506	07/20/12	#2 East - Office	11	< 10	08/07/12 - DS
123828	8593505	07/20/12	#3 North - School	< 10	< 10	08/07/12 - DS

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ANALYSIS REPORT

Client Information:

Barr Engineering Company
7390 Ohms Lane
Edina, MN 55439-2330

Chain of Custody No.: 12-0775
Date Received: 08/10/12
Analysis Method: 40 CFR §50
Appendix G

Location Leadwood

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
123970	8594895	07/23/12	#1 South - Wortham	< 10	< 10	08/14/12 - DS
123971	8594897	07/23/12	#2 East - Office	11	< 10	08/14/12 - DS
123972	8594896	07/23/12	#3 North - School	13	< 10	08/14/12 - DS
123973	8594885	07/24/12	#1 South - Wortham	13	< 10	08/14/12 - DS
123974	8594887	07/24/12	#2 East - Office	< 10	< 10	08/14/12 - DS
123975	8594886	07/24/12	#3 North - School	< 10	< 10	08/14/12 - DS
123976	8594870	07/25/12	#1 South - Wortham	< 10	< 10	08/14/12 - DS
123977	8594872	07/25/12	#2 East - Office	< 10	< 10	08/14/12 - DS
123978	8594871	07/25/12	#3 North - School	< 10	< 10	08/14/12 - DS
123979	8594867	07/26/12	#1 South - Wortham	35	< 10	08/14/12 - DS
123980	8594869	07/26/12	#2 East - Office	17	< 10	08/14/12 - DS
123981	8594868	07/26/12	#3 North - School	22	< 10	08/14/12 - DS
123982	8594851	07/27/12	#1 South - Wortham	< 10	< 10	08/14/12 - DS
123983	8594853	07/27/12	#2 East - Office	< 10	< 10	08/14/12 - DS
123984	8594852	07/27/12	#3 North - School	26	< 10	08/14/12 - DS
123985	8594842	07/30/12	#1 South - Wortham	37	< 10	08/14/12 - DS
123986	8594844	07/30/12	#2 East - Office	49	< 10	08/14/12 - DS
123987	8594843	07/30/12	#3 North - School	38	< 10	08/14/12 - DS
123988	8594832	07/31/12	#1 South - Wortham	27	< 10	08/14/12 - DS
123989	8594834	07/31/12	#2 East - Office	24	< 10	08/14/12 - DS
123990	8594831	07/31/12	#3 North - School	< 10	< 10	08/14/12 - DS
123991	8594833	07/31/12	#3 North - School	19	< 10	08/14/12 - DS

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ANALYSIS REPORT

Client Information:

Barr Engineering Company
7390 Ohms Lane
Edina, MN 55439-2330

Chain of Custody No.: 12-0686
Date Received: 07/18/12
Analysis Method: 40 CFR §50
Appendix G

Location Big River

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
123563	8593425	07/02/12	#4 Primary	118	< 10	07/31/12 - DS
123564	8593416	07/03/12	#4 Primary	77	< 10	07/31/12 - DS
123565	8593426	07/03/12	#4 QA	75	< 10	07/31/12 - DS
123566	8593406	07/05/12	#4 Primary	83	< 10	07/31/12 - DS
123567	8593407	07/05/12	#4 QA	77	< 10	07/31/12 - DS
123568	8593598	07/06/12	#4 Primary	58	< 10	07/31/12 - DS

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ANALYSIS REPORT

Client Information:

Barr Engineering Company
7390 Ohms Lane
Edina, MN 55439-2330

Chain of Custody No.: 12-0717
Date Received: 07/27/12
Analysis Method: 40 CFR §50
Appendix G

Location Big River

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
123672	8593588	07/09/12	#4 Primary	19	< 10	08/01/12 - DS
123673	8593578	07/10/12	#4 Primary	21	< 10	08/01/12 - DS
123674	8593589	07/10/12	#4 QA	21	< 10	08/01/12 - DS
123675	8593569	07/11/12	#4 Primary	23	< 10	08/01/12 - DS
123676	8593559	07/12/12	#4 Primary	35	< 10	08/01/12 - DS
123677	8593560	07/12/12	#4 QA	41	< 10	08/01/12 - DS
123678	8593550	07/13/12	#4 Primary	35	< 10	08/01/12 - DS

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Fayette, MO 65248-0030

Phone: (660) 248-1911
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<http://www.inovatia.com>

ANALYSIS REPORT

Client Information:

Barr Engineering Company
7390 Ohms Lane
Edina, MN 55439-2330

Chain of Custody No.: 12-0745
Date Received: 08/03/12
Analysis Method: 40 CFR §50
Appendix G

Location Big River

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
123792	8593540	07/16/12	#4 Primary	19	< 10	08/07/12 - DS
123793	8593531	07/17/12	#4 Primary	59	< 10	08/07/12 - DS
123794	8593541	07/17/12	#4 QA	63	< 10	08/07/12 - DS
123795	8593522	07/18/12	#4 Primary	95	< 10	08/07/12 - DS
123796	8593513	07/19/12	#4 Primary	134	< 10	08/07/12 - DS
123797	8593514	07/19/12	#4 QA	123	< 10	08/07/12 - DS
123798	8593503	07/20/12	#4 Primary	39	< 10	08/07/12 - DS

Submitted by: _____

Jennifer Vandelicht
Digitally signed by Jennifer
Vandelicht
DN: cn=jennifer.Vandelicht,
ou=Inovatia Laboratories, LLC,
ou=Quality Assurance,
email=jvandelicht@inovatia.
com, c=US
Date: 2012.08.08 16:19:21
-05'00'

8/8/12

Date

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ANALYSIS REPORT

Client Information:

Barr Engineering Company
7390 Ohms Lane
Edina, MN 55439-2330

Chain of Custody No.: 12-0775
Date Received: 08/10/12
Analysis Method: 40 CFR §50
Appendix G

Location Big River

Lab No.	Filter ID	Date	Site	µg Pb/Filter	µg Cd/Filter	Date - Analyst
123939	8594893	07/23/12	#4 Primary	46	< 10	08/21/12 - DS
123940	8594884	07/24/12	#4 Primary	75	< 10	08/21/12 - DS
123941	8594894	07/24/12	#4 QA	71	< 10	08/21/12 - DS
123942	8594876	07/25/12	#4 Primary	21	< 10	08/21/12 - DS
123943	8594865	07/26/12	#4 Primary	41	< 10	08/21/12 - DS
123944	8594866	07/26/12	#4 QA	37	< 10	08/21/12 - DS
123945	8594857	07/27/12	#4 Primary	19	< 10	08/21/12 - DS
123946	8594848	07/30/12	#4 Primary	139	< 10	08/21/12 - DS
123947	8594838	07/31/12	#4 Primary	97	< 10	08/21/12 - DS
123948	8594839	07/31/12	#4 QA	86	< 10	08/21/12 - DS

Submitted by: _____


Digitally signed by Jennifer
Vandelicht
Date: 2012.08.22 09:52:04 -05'00'

8/22/12

Date

This report has been produced for the exclusive and confidential use of our clients. Reference to the analyses, the results, or the corporation in any news releases, advertising, or other public announcement is prohibited without obtaining prior written consent.

Meteorological Data

Meteorological Report
The Doe Run Company
Wind Speed

Site Name: Rivermines

Average Interval: 01 Hour

Units: mph

Sampling Frequency: 01 Second

2012	Hour	24 Hour Avg																								
		Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1-Jul	0.2	0.7	1.0	0.2	0.9	0.3	0.5	1.4	1.9	3.5	3.3	3.5	3.1	3.2	3.8	4.8	5.9	5.4	3.7	2.4	1.5	2.4	1.7	0.9	5.9	2.3
2-Jul	0.2	0.0	0.2	0.3	0.4	0.3	0.3	1.1	2.2	4.9	4.8	3.5	8.2	6.4	2.2	1.6	2.0	1.4	0.2	0.7	1.5	0.9	1.6	0.7	8.2	1.9
3-Jul	1.2	0.6	0.7	1.0	1.4	0.4	0.2	0.7	1.6	2.6	3.8	3.3	3.6	4.2	9.0	8.2	6.0	6.4	7.1	5.5	5.0	3.6	3.2	3.3	9.0	3.4
4-Jul	1.0	0.1	0.0	0.4	0.7	0.4	0.8	1.4	2.5	2.7	3.8	3.8	3.9	4.0	3.0	2.4	2.7	2.1	0.4	0.8	2.2	4.3	1.0	0.3	4.3	1.9
5-Jul	0.1	0.0	0.0	-0.0	0.0	0.0	0.0	0.8	1.6	2.7	6.0	6.1	4.5	2.9	4.0	3.2	2.9	3.9	3.9	3.0	0.8	2.2	0.5	0.1	0.0	2.1
6-Jul	0.3	0.0	0.3	0.4	0.1	0.1	0.5	0.5	1.3	2.3	2.8	3.0	4.8	6.7	4.1	2.4	4.0	2.7	1.0	0.7	1.3	0.1	0.0	0.1	6.7	1.7
7-Jul	0.9	0.4	0.3	0.9	0.2	0.0	0.1	0.8	0.9	2.0	2.6	3.6	3.4	5.2	4.8	4.8	4.1	7.5	4.4	4.7	1.6	0.7	0.8	1.5	7.5	2.3
8-Jul	1.1	1.7	1.1	1.5	0.5	1.0	0.9	1.9	1.1	1.6	1.4	1.2	2.2	0.6	2.3	5.5	2.8	2.2	4.7	2.1	2.6	1.5	2.4	1.5	5.5	1.9
9-Jul	1.8	1.3	0.1	0.4	0.5	0.1	0.9	1.7	3.0	2.3	3.9	3.5	3.7	3.5	4.0	4.4	4.2	4.9	2.4	0.2	0.3	0.1	0.6	0.3	4.9	2.0
10-Jul	0.8	0.2	0.2	0.2	0.1	0.1	0.1	2.3	3.9	4.7	5.2	5.0	5.7	5.6	5.3	5.5	5.4	4.7	3.3	0.8	0.2	0.2	0.3	0.4	5.7	2.5
11-Jul	0.2	0.1	0.2	0.5	0.3	0.2	0.2	2.3	2.4	2.7	3.4	4.3	5.0	5.7	5.3	4.8	3.4	3.3	0.1	0.5	0.3	0.1	0.2	0.8	5.7	1.9
12-Jul	0.8	0.5	0.2	0.1	0.1	0.6	0.4	0.4	2.3	3.3	4.9	4.6	5.2	6.0	6.1	5.4	5.3	5.9	4.3	1.3	0.1	0.0	0.2	0.0	6.1	2.4
13-Jul	0.1	0.3	0.1	0.1	0.0	0.0	0.8	2.6	1.7	2.0	2.5	3.4	3.6	3.9	4.8	4.8	2.8	3.3	3.4	0.4	0.5	1.8	2.7	1.1	4.8	1.9
14-Jul	0.6	0.2	0.5	0.2	0.3	0.0	0.3	2.8	3.8	4.5	5.1	4.1	3.0	3.0	2.0	5.6	5.0	4.6	3.2	2.4	0.4	0.5	2.7	0.4	5.6	2.3
15-Jul	1.3	1.2	0.6	0.9	0.8	0.7	0.5	0.8	1.1	2.8	3.4	5.4	4.6	6.0	4.9	5.3	5.0	6.1	6.0	4.4	4.4	4.9	4.8	1.3	6.1	3.2
16-Jul	1.2	1.3	0.7	1.0	1.9	1.2	2.4	5.4	4.5	3.6	5.7	5.4	3.3	4.5	5.3	5.0	5.3	3.0	3.5	3.4	3.1	3.2	2.5	5.7	3.4	
17-Jul	2.0	2.2	1.9	2.2	0.7	0.1	0.6	1.7	2.1	2.8	3.1	3.3	2.6	6.9	6.5	5.3	5.8	5.5	3.9	4.5	4.9	3.3	1.5	1.3	6.9	3.1
18-Jul	0.7	0.5	0.2	0.4	0.4	0.2	0.8	1.4	2.4	3.2	3.3	3.3	4.4	3.7	3.7	3.2	6.8	6.7	5.0	4.3	6.1	2.5	4.1	5.1	6.8	3.0
19-Jul	3.1	1.9	2.0	1.2	1.9	1.5	1.3	2.0	3.0	4.2	5.3	5.0	4.2	4.1	4.1	3.3	4.1	2.0	1.1	0.3	0.2	2.1	1.0	0.2	5.3	2.5
20-Jul	0.4	0.2	0.4	0.3	0.4	2.7	4.6	4.6	5.2	6.7	6.5	6.6	7.3	8.4	8.8	8.1	7.5	6.8	5.3	4.0	2.2	0.4	0.9	0.1	8.8	4.1
21-Jul	0.1	0.4	0.3	0.9	0.2	0.5	1.1	3.5	4.4	5.1	4.5	5.9	5.3	4.9	4.9	4.7	4.4	3.8	2.5	0.5	0.1	0.4	0.2	0.3	5.9	2.5
22-Jul	0.2	0.4	0.5	0.4	0.4	0.5	0.5	0.8	1.2	3.6	3.4	3.1	3.8	3.8	5.8	5.3	5.5	4.8	4.6	3.8	3.9	4.9	5.2	4.0	5.8	2.9
23-Jul	3.0	1.4	3.0	2.5	0.9	0.5	3.3	3.7	4.2	3.7	3.1	4.4	4.8	4.6	4.5	5.3	4.8	5.9	5.9	4.8	5.6	6.6	5.2	3.5	6.6	4.0
24-Jul	3.5	2.8	2.9	3.7	3.2	2.5	3.1	3.6	3.1	4.2	3.2	3.7	2.8	3.2	3.5	2.6	3.7	4.0	2.8	4.0	5.9	6.8	5.5	4.7	6.8	3.7
25-Jul	2.3	3.0	2.6	3.4	2.7	3.0	3.4	3.1	3.0	2.8	5.7	6.8	7.3	8.1	7.4	8.4	8.1	8.9	5.8	7.0	9.4	9.1	9.7	8.2	9.7	5.7
26-Jul	5.7	5.3	5.6	5.4	4.4	2.0	1.3	1.7	2.8	2.2	3.2	3.5	2.1	2.6	5.7	5.2	3.2	0.4	1.9	2.4	1.9	1.2	1.2	0.2	5.7	3.0
27-Jul	1.8	2.2	2.1	1.4	0.1	0.5	1.4	2.1	2.3	2.7	3.5	4.1	4.9	3.9	4.3	4.7	5.8	5.5	6.2	1.2	0.0	0.1	0.1	0.3	6.2	2.5
28-Jul	0.3	0.3	0.3	0.1	0.3	0.2	0.1	0.8	2.5	3.7	4.4	6.1	5.5	6.1	5.8	5.4	6.5	5.7	3.1	0.5	0.6	0.1	0.0	0.7	6.5	2.5
29-Jul	0.1	0.2	0.4	0.4	0.5	0.6	0.5	1.8	3.6	0.8	2.9	4.6	4.3	6.7	6.8	7.0	6.4	8.5	5.0	3.6	2.1	2.1	2.3	3.3	7.0	3.0
30-Jul	3.7	4.6	6.2	7.2	4.7	3.0	3.4	2.9	2.1	5.4	5.2	6.2	6.3	6.1	4.7	2.7	3.3	1.7	2.0	0.4	1.2	0.5	0.4	0.1	7.2	3.5
31-Jul	0.5	0.7	0.3	0.1	0.6	0.0	0.2	0.3	2.2	3.0	4.0	3.1	2.7	2.9	2.9	3.3	2.2	2.2	2.5	1.9	1.2	0.6	2.3	1.8	4.0	1.7

		Maximum Hour//Monthly Average	9.7	2.7
		Total Hours In Month	744	
		Valid Hours//Percent Data Captured	744	100.0%
BARR				

Meteorological Report
The Doe Run Company
Wind Direction

Site Name: Rivermines

Average Interval: 01 Hour

Units: Degrees

Sampling Frequency: 01 Second

2012	Hour																									24 Hour Avg
		Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1-Jul	208	89	174	197	218	203	260	260	269	307	288	310	272	307	262	5	108	108	149	83	85	230	183	189	198	
2-Jul	189	217	176	193	217	185	237	273	283	8	104	97	151	232	231	188	284	226	214	207	209	10	27	197	181	
3-Jul	211	306	205	227	234	201	271	257	259	274	279	281	287	233	171	164	162	171	187	190	197	190	201	223	224	
4-Jul	240	206	200	199	209	214	250	268	275	272	302	321	282	252	226	255	261	230	120	140	160	192	227	209	230	
5-Jul	184	118	198	193	192	189	248	257	298	328	346	21	22	359	302	68	18	49	85	58	136	136	214	226	177	
6-Jul	200	198	187	196	194	222	239	270	286	39	356	20	40	165	187	201	256	234	263	229	206	208	201	200	200	
7-Jul	191	220	210	195	192	189	287	257	25	27	72	67	61	103	139	207	231	230	236	351	358	239	190	185	185	
8-Jul	223	219	228	236	199	213	228	212	218	353	302	290	355	32	85	185	313	9	66	90	188	251	38	202	197	
9-Jul	253	358	219	240	178	195	198	344	353	14	12	16	16	60	5	25	22	18	27	46	201	200	198	184	141	
10-Jul	168	192	184	187	204	229	214	28	57	43	80	64	61	47	63	60	68	65	73	78	201	196	200	184	123	
11-Jul	189	200	196	185	192	194	228	15	1	8	87	74	54	39	59	66	130	142	226	210	202	353	164	181	141	
12-Jul	250	183	188	185	183	198	229	314	3	46	54	66	64	64	76	66	85	134	133	143	165	235	192	195	144	
13-Jul	194	184	187	189	196	187	264	194	250	42	103	75	60	98	119	124	104	125	167	187	283	260	148	219	165	
14-Jul	256	206	184	210	229	191	233	212	212	177	175	196	227	224	143	173	180	175	172	173	180	145	181	209	184	
15-Jul	128	209	183	174	321	199	323	300	354	41	121	155	165	188	181	193	170	184	176	171	184	190	192	228	197	
16-Jul	179	177	177	174	199	199	213	221	225	222	184	189	189	207	214	219	206	224	210	226	217	215	214	210	204	
17-Jul	214	210	221	229	212	209	249	252	272	290	275	252	256	192	160	183	152	159	151	157	169	180	215	241	212	
18-Jul	226	151	118	191	180	216	254	280	278	289	300	264	289	242	272	263	109	151	147	112	171	203	147	175	209	
19-Jul	193	222	229	208	200	247	256	251	280	291	299	301	286	281	307	286	302	280	259	236	217	49	281	209	248	
20-Jul	214	217	199	187	249	345	15	8	12	358	11	18	8	5	9	19	9	17	11	22	18	28	28	33	85	
21-Jul	191	182	189	178	181	191	75	68	58	57	72	32	46	52	63	43	45	46	37	72	117	193	194	186	107	
22-Jul	187	186	184	191	193	201	268	12	105	161	134	103	133	89	146	137	160	157	165	166	185	185	192	203	159	
23-Jul	222	213	219	212	202	199	220	243	237	245	239	220	215	204	198	214	224	211	208	199	193	207	216	216	215	
24-Jul	213	215	228	233	238	240	248	255	273	300	306	318	284	216	212	240	223	223	235	203	199	197	205	210	238	
25-Jul	213	217	228	236	237	239	245	252	269	287	222	208	220	209	222	217	219	216	198	197	197	198	203	223		
26-Jul	215	219	222	232	237	261	259	281	323	1	220	132	214	277	300	147	207	237	161	205	188	194	213	214	215	
27-Jul	246	237	225	238	195	186	241	249	249	253	256	253	245	263	268	231	290	298	328	356	205	197	211	181	246	
28-Jul	191	193	185	187	182	187	219	329	8	358	336	339	5	4	20	12	13	29	23	36	94	200	194	194	147	
29-Jul	204	184	203	215	326	221	184	65	65	193	168	150	138	169	167	195	178	170	160	156	149	145	148	152	171	
30-Jul	160	178	191	183	184	169	177	208	283	327	351	349	13	15	16	36	20	9	14	3	9	48	193	224	139	
31-Jul	195	206	204	194	189	234	226	328	12	359	13	351	44	13	332	325	341	349	155	166	165	308	234	236	216	

Total Hours In Month	744
Valid Hours	744
Percent Data Captured	100.0%

BARR

Meteorological Report

The Doe Run Company

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Site Name: Rivermines

Average Interval: 01 Hour

Units: Degrees

2012	Hour																									24 Hour Avg
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1-Jul	6.4	9.6	18.1	1.7	18.6	16.1	23.0	36.2	44.9	40.4	50.3	46.7	54.4	53.5	43.3	49.8	31.0	31.9	41.3	38.2	28.3	35.1	42.9	8.0	32	
2-Jul	3.8	0.4	8.4	6.4	12.1	4.8	12.3	38.6	42.9	29.6	28.8	36.0	29.8	36.5	33.2	42.0	41.5	32.8	6.8	8.5	18.0	15.2	34.8	25.6	23	
3-Jul	25.8	9.9	16.9	18.5	15.6	14.6	11.0	26.2	39.7	51.1	48.5	46.4	49.2	43.6	24.2	27.9	29.7	24.7	22.4	19.0	18.5	20.1	19.0	21.3	27	
4-Jul	13.9	7.8	1.7	5.3	10.0	12.7	16.7	40.5	51.0	43.7	49.5	52.9	60.3	58.7	49.7	52.2	45.9	27.6	9.6	7.8	19.2	19.0	18.4	6.0	28	
5-Jul	1.1	1.7	0.4	0.8	0.2	0.5	18.7	33.8	43.4	29.7	27.5	45.5	66.7	40.9	50.9	50.9	42.4	27.9	32.6	17.8	21.7	6.3	1.1	4.9	24	
6-Jul	2.2	0.8	2.8	4.5	1.4	4.6	11.7	24.3	32.0	43.8	42.5	25.0	31.2	22.7	26.6	40.2	36.8	27.0	25.6	11.7	9.4	1.8	0.6	1.9	18	
7-Jul	13.4	8.7	8.0	35.5	1.8	0.6	9.9	32.6	36.8	36.4	52.9	49.6	47.8	37.1	44.9	37.9	35.9	44.8	37.9	80.8	42.2	21.5	14.1	19.7	30	
8-Jul	47.0	27.9	19.0	41.5	11.7	16.3	23.8	24.5	27.5	43.9	52.7	34.2	35.7	41.9	43.9	42.5	37.8	28.5	31.2	42.8	30.7	17.6	27.6	19.0	32	
9-Jul	16.8	37.6	2.4	16.6	7.9	2.3	18.1	31.5	30.2	54.0	31.8	36.9	27.6	40.3	22.3	32.0	26.3	26.0	23.0	7.1	1.5	0.3	2.0	2.8	21	
10-Jul	11.0	1.3	0.8	0.8	2.2	1.0	3.2	28.1	31.7	37.2	35.7	35.9	36.0	36.5	45.9	43.4	32.4	39.6	29.4	16.8	0.8	1.5	4.7	5.0	20	
11-Jul	2.7	1.2	4.7	4.7	8.9	5.7	8.9	22.0	31.0	42.9	53.8	42.4	37.7	37.7	43.7	37.7	33.0	26.8	8.8	18.5	2.8	6.0	7.0	19.7	21	
12-Jul	36.8	5.4	2.8	1.2	1.8	12.2	16.5	26.5	28.8	45.1	35.4	41.2	38.1	38.3	36.1	39.8	33.4	28.8	26.5	14.9	3.8	0.8	13.6	0.6	22	
13-Jul	0.7	3.7	1.4	0.4	1.2	0.3	21.1	31.8	62.2	38.4	85.3	41.1	40.9	43.8	31.2	33.9	30.7	29.8	23.1	10.6	12.7	32.4	16.2	28.9	25	
14-Jul	14.9	8.4	5.2	5.8	3.2	2.7	14.7	23.1	31.8	33.5	28.8	29.6	31.2	34.8	41.3	25.4	23.0	23.4	20.4	20.8	5.2	8.8	17.2	12.1	19	
15-Jul	11.1	37.1	11.0	9.4	47.2	20.6	11.3	45.8	39.3	40.7	45.6	45.3	55.8	44.4	41.0	30.0	32.8	26.4	26.4	25.1	20.4	17.9	19.3	20.0	24.3	30
16-Jul	12.9	11.0	11.6	11.8	8.7	11.4	24.5	25.0	30.4	25.8	33.1	34.3	38.5	39.0	39.0	42.9	28.4	25.3	44.2	24.8	19.7	16.8	13.0	14.7	24	
17-Jul	16.3	15.3	17.8	18.1	7.5	3.7	24.3	30.4	42.9	45.8	60.4	52.6	49.3	35.4	22.8	26.1	27.9	23.8	28.2	23.1	20.6	24.3	16.9	17.3	27	
18-Jul	11.5	11.1	3.7	3.3	5.8	8.8	27.5	45.1	51.9	46.9	47.6	49.6	81.0	38.0	48.3	57.8	37.2	24.9	49.9	30.6	24.7	24.5	26.9	24.3	32	
19-Jul	27.7	19.1	18.9	13.8	11.2	32.6	28.8	38.7	39.0	44.2	42.5	43.3	49.7	45.7	44.3	43.8	40.2	38.0	31.8	8.7	5.7	33.0	26.1	5.1	30	
20-Jul	13.1	4.0	5.0	7.0	21.5	17.7	23.9	26.1	27.8	27.0	27.9	30.1	28.0	24.9	25.2	27.8	25.7	25.6	23.8	19.8	20.1	13.8	22.8	8.0	21	
21-Jul	1.2	3.0	1.8	5.5	1.4	4.8	31.7	31.4	39.2	38.9	44.2	39.8	45.6	42.4	40.1	37.4	34.0	32.9	28.5	18.9	4.9	2.0	1.2	2.8	22	
22-Jul	1.9	5.7	10.1	9.9	7.5	14.0	23.7	31.5	51.1	41.6	47.7	52.3	60.2	57.4	35.1	37.1	37.8	28.2	22.1	18.4	18.2	17.6	18.6	21.3	28	
23-Jul	21.9	11.6	19.0	15.3	7.3	4.6	22.3	31.0	35.8	39.7	52.3	37.9	48.0	54.6	40.8	33.3	29.1	25.9	21.8	18.8	20.3	20.6	19.8	27		
24-Jul	15.9	17.4	22.6	23.8	23.5	21.9	29.0	41.6	47.4	43.8	50.4	49.5	54.4	39.1	58.3	37.9	37.3	27.9	22.9	16.0	18.4	20.8	21.0	20.8	32	
25-Jul	17.4	17.1	23.2	19.9	20.4	22.2	30.0	42.4	45.2	48.4	37.5	32.5	36.3	30.4	34.8	28.2	24.4	28.3	21.7	18.9	19.8	20.3	20.7	21.9	27	
26-Jul	22.8	28.6	25.5	25.2	28.0	32.6	32.2	33.2	38.8	57.2	35.3	38.1	50.6	45.5	38.7	34.4	25.6	15.8	22.4	21.4	19.7	7.8	14.9	4.4	29	
27-Jul	12.7	17.1	15.1	18.0	2.3	4.9	22.0	35.5	35.5	39.3	40.6	43.4	40.0	45.7	42.7	25.9	39.6	40.1	19.3	17.1	0.8	0.7	5.4	1.8	24	
28-Jul	2.8	8.7	1.8	1.0	3.5	4.6	6.0	33.1	36.4	40.8	36.2	29.8	37.0	34.1	38.4	32.3	28.1	31.0	24.0	14.0	15.9	1.0	1.0	9.0	20	
29-Jul	1.9	3.3	5.5	8.9	30.1	16.9	10.6	41.2	43.1	15.7	33.0	32.0	31.0	31.9	29.8	27.8	26.7	25.1	25.7	28.3	25.9	23.9	27.0	25.5	24	
30-Jul	29.9	29.1	25.4	24.5	21.8	20.8	22.2	34.3	47.3	33.4	27.4	29.3	30.5	27.5	34.1	24.7	24.4	18.3	20.0	25.0	12.0	24.3	20.9	0.9	25	
31-Jul	3.8	7.9	4.5	1.9	10.6	0.1	12.1	17.2	43.6	31.3	34.7	36.3	64.9	46.1	46.5	62.1	58.8	28.9	29.7	24.8	28.0	29.0	33.4	20.6	28	

BARR	Total Hours in Month	744
	Valid Hours	744
	Percent Data Captured	100.0%

Meteorological Report
The Doe Run Company
Temperature

Site Name: Rivermines

Average Interval: 01 Hour

Units: Deg. C

Sampling Frequency: 01 Second

2012	Hour	24 Hour																										
		Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Max	Avg
1-Jul	27	25	24	23	22	23	27	31	34	37	38	38	39	40	40	40	38	34	30	28	27	28	28	25	24	40.4	30.3	
2-Jul	23	22	22	21	21	22	26	30	32	34	33	35	34	26	27	30	30	28	27	26	25	25	24	23	34.6	26.8		
3-Jul	22	23	22	21	21	22	24	27	31	34	36	37	38	36	37	33	34	34	33	32	31	30	29	28	28	36.7	29.1	
4-Jul	27	25	24	23	23	24	27	31	34	36	37	38	39	40	40	41	41	41	40	38	36	33	31	31	29	27	40.1	32.3
5-Jul	25	25	24	23	22	23	27	31	34	37	37	38	40	40	40	41	41	41	40	38	36	35	32	29	27	41.4	32.8	
6-Jul	26	25	25	24	24	24	27	32	35	37	39	39	37	29	35	39	37	36	35	32	29	28	26	25	39.2	31.0		
7-Jul	24	23	23	23	22	23	27	31	34	37	38	39	39	40	39	40	39	39	29	24	25	25	24	23	23	40.0	29.7	
8-Jul	23	22	22	22	22	22	24	27	31	34	35	35	30	32	36	34	30	26	24	23	22	22	22	22	38.2	26.9		
9-Jul	22	22	21	21	21	22	23	25	28	28	28	29	29	28	29	30	29	29	29	27	25	24	22	22	22	29.6	25.5	
10-Jul	21	21	20	20	20	20	23	28	28	30	31	32	32	33	33	33	32	32	29	24	22	21	20	33.0	28.5			
11-Jul	19	18	18	18	17	18	22	24	27	29	31	33	32	33	34	34	31	28	28	26	24	23	23	22	33.7	25.6		
12-Jul	21	20	19	19	18	19	22	26	28	31	32	33	33	34	34	34	34	34	32	31	29	26	24	23	22	34.2	26.8	
13-Jul	21	20	20	19	19	20	23	26	28	29	31	31	31	32	32	32	32	31	30	28	26	25	24	23	23	32.0	26.4	
14-Jul	22	21	21	20	20	20	23	25	27	27	28	29	30	30	30	29	29	28	27	27	25	25	24	23	23	29.8	25.3	
15-Jul	22	21	20	20	20	20	22	24	27	29	30	32	33	34	34	34	34	33	31	30	28	27	27	26	34.1	27.4		
16-Jul	25	24	24	23	22	23	27	29	31	30	32	33	33	35	36	37	35	34	27	27	26	26	25	25	25	36.7	28.7	
17-Jul	25	24	24	25	23	23	27	29	32	34	35	36	36	34	32	32	32	32	33	31	30	29	27	27	27	36.4	29.8	
18-Jul	26	25	24	23	23	24	28	31	34	37	38	39	39	39	40	40	37	35	34	32	31	30	29	28	40.2	31.9		
19-Jul	27	27	27	26	25	26	30	33	35	36	38	39	39	40	40	38	39	39	38	37	34	31	31	29	27	39.5	32.9	
20-Jul	25	24	24	23	23	23	25	26	27	29	30	31	31	31	31	30	30	29	27	26	25	24	23	23	31.4	27.0		
21-Jul	21	20	19	18	18	18	22	25	28	27	29	31	32	33	33	34	33	33	31	29	25	23	21	20	33.5	25.9		
22-Jul	19	18	17	17	17	17	21	28	30	32	34	34	36	36	37	37	36	36	34	32	30	29	29	28	36.9	28.5		
23-Jul	27	26	26	25	24	24	28	31	33	35	36	37	38	39	39	39	39	38	36	34	33	31	30	29	39.3	32.5		
24-Jul	28	28	28	27	27	27	29	32	34	36	38	38	39	39	40	40	39	39	38	35	34	33	31	30	40.0	33.7		
25-Jul	29	28	28	28	27	27	30	33	35	37	38	39	39	40	40	40	39	38	37	35	33	32	31	30	40.3	33.9		
26-Jul	30	29	29	30	29	29	29	30	31	32	34	34	35	37	33	24	24	24	24	23	22	22	22	22	36.7	28.3		
27-Jul	22	22	22	21	21	20	24	27	29	32	35	37	38	39	33	34	37	37	35	30	26	24	22	21	38.8	28.7		
28-Jul	20	19	18	17	17	17	21	25	27	29	31	32	33	34	34	34	34	32	31	28	27	23	21	20	34.0	28.0		
29-Jul	19	18	19	19	19	19	20	20	20	20	22	23	25	28	30	30	30	28	27	26	25	24	24	24	30.3	23.4		
30-Jul	24	24	24	24	24	23	25	28	31	33	33	34	34	34	34	32	31	31	30	28	28	27	26	24	34.3	28.8		
31-Jul	22	21	21	20	20	20	23	26	29	31	33	34	35	37	38	39	39	38	38	36	33	30	28	27	38.9	29.4		



Maximum Hour//Monthly Average	41.4
Total Hours in Month	744
Valid Hours	744
Percent Data Captured	100.0%

Meteorological Report
The Doe Run Company
Site Pressure

Site Name: Rivermines

Average Interval: 01 Hour

Units: mmHg

Sampling Frequency: 01 Second

2012	Hour	24 Hour																								
		Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1-Jul	742	742	741	742	742	743	743	743	743	744	744	744	744	743	743	742	742	742	742	743	743	743	743	743	744	743
2-Jul	743	743	743	743	743	744	744	744	744	744	745	744	744	743	743	743	744	744	744	743	743	744	744	744	745	744
3-Jul	744	744	744	743	744	744	744	744	744	744	744	744	744	743	743	742	742	742	741	741	742	742	742	742	744	743
4-Jul	742	742	743	743	743	743	744	744	744	744	744	744	744	743	743	742	742	742	742	742	742	743	743	743	744	743
5-Jul	743	743	743	743	744	744	744	744	744	744	744	744	744	743	743	742	742	742	742	742	742	743	743	743	744	743
6-Jul	743	743	743	744	744	744	744	744	744	744	744	744	744	744	743	743	742	742	742	742	742	743	743	743	744	743
7-Jul	744	744	744	744	744	744	744	744	744	744	744	744	744	744	743	743	742	742	742	742	743	743	744	744	744	743
8-Jul	743	743	744	744	744	744	744	744	744	744	744	744	744	744	743	743	742	742	742	743	743	744	744	744	745	744
9-Jul	745	745	745	744	744	745	745	745	745	745	745	745	744	744	744	743	743	743	743	743	744	744	744	744	745	744
10-Jul	744	744	744	744	744	745	745	745	745	745	745	745	745	744	744	743	743	743	743	743	743	744	744	744	745	744
11-Jul	744	745	745	745	745	745	745	745	745	745	745	745	745	744	744	743	743	743	744	744	744	745	745	745	745	745
12-Jul	744	744	744	744	745	745	745	745	745	745	745	745	745	744	744	744	743	743	743	744	744	745	745	745	745	744
13-Jul	745	745	745	745	745	745	745	745	745	745	745	745	745	744	744	744	744	744	744	744	745	745	745	745	745	745
14-Jul	745	745	745	745	745	746	746	746	746	746	746	746	746	746	745	745	745	745	744	744	745	746	746	746	746	745
15-Jul	745	745	745	746	746	747	747	747	747	747	747	747	747	746	746	745	745	744	744	744	745	745	745	745	745	746
16-Jul	745	745	745	745	745	745	745	745	745	745	745	745	745	744	744	744	743	743	743	744	744	745	745	745	745	744
17-Jul	743	743	743	742	743	743	743	744	743	743	745	745	745	744	744	743	743	742	742	742	742	742	742	742	742	742
18-Jul	742	742	742	742	743	743	743	743	744	743	744	743	743	742	742	742	742	741	741	741	742	742	743	743	743	742
19-Jul	742	742	742	742	743	743	744	743	743	744	743	743	743	742	742	742	742	741	741	741	741	742	742	742	742	742
20-Jul	743	743	743	743	743	743	744	744	744	744	744	744	744	744	744	744	744	744	744	744	745	745	745	745	745	744
21-Jul	745	745	745	746	746	746	746	746	747	746	747	746	746	746	745	745	745	745	745	745	745	745	746	746	746	746
22-Jul	746	746	746	746	746	746	746	747	747	747	747	747	747	746	746	746	745	745	745	745	745	746	746	746	746	746
23-Jul	746	746	746	746	747	747	747	747	747	747	747	747	746	746	745	745	744	744	744	744	744	745	745	745	745	745
24-Jul	745	744	744	744	745	745	745	745	745	745	745	744	744	743	742	742	741	741	741	741	741	742	742	742	743	743
25-Jul	742	742	742	741	741	742	742	742	742	742	742	741	741	740	740	739	739	739	739	738	738	738	739	739	740	742
26-Jul	739	739	738	739	739	740	740	740	740	740	740	740	740	739	739	739	739	739	739	739	739	739	739	739	739	740
27-Jul	742	742	742	741	742	742	742	743	743	743	743	742	742	741	742	742	741	741	741	742	742	743	743	745	745	742
28-Jul	745	745	745	745	746	746	746	747	747	747	747	747	747	746	746	746	745	745	746	746	746	746	746	746	747	746
29-Jul	746	745	746	746	746	747	747	747	747	747	747	747	746	746	745	744	744	743	743	742	743	743	743	743	747	745
30-Jul	742	742	741	741	741	741	741	741	741	741	741	741	741	741	741	741	741	741	741	742	742	742	742	742	741	741
31-Jul	742	742	742	743	743	743	743	743	743	743	743	743	743	743	743	743	742	741	741	741	742	742	742	742	743	742

		Maximum Hour//Monthly Average	747	744
		Total Hours in Month	744	744
		Valid Hours//Percent Data Captured	744	100.0%
BARR				

Meteorological Report
The Doe Run Company
Precipitation

Site Name: Rivermines

Average Interval: 01 Hour

Sampling Frequency: 01 Second

2012	Hour	24 Hour																									
		Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Max
1-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01
7-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.54	0.54
8-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.12	0.17
9-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.11	0.11
10-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.14	0.14
17-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.10	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.18	0.18
27-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29-Jul	0.00	0.00	0.00	0.00	0.00	0.02	0.03	0.23	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.29	0.29
30-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31-Jul	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

BARR

Maximum Hour//Monthly Total
Total Hours in Month
Valid Hours//Percent Data Captured

744
744
100.0%